



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION II

DATE: APR 29 1991

SUBJECT: Removal Site Evaluation for Franklin Plastics Corporation,  
Kearny, New Jersey

FROM: Nick Magriples, On-Scene Coordinator  
Removal Action Branch

*Nick Magriples*

TO: File

I. INTRODUCTION

On October 19, 1990, the United States Environmental Protection Agency (EPA), Removal Action Branch, received a request from the Program Support Branch to consider the Franklin Plastics Corporation, Kearny, New Jersey for Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Removal Action consideration.

Although there has been a release to the environment at the Franklin Plastics Corporation, a CERCLA Removal Action is not warranted at this time. An Environmental Clean-up Responsibility Act (ECRA) clean-up plan is near approval with the New Jersey Department of Environmental Protection (NJDEP), so it appears that timely and appropriate action will be taken to clean-up the site.

II. PERSONNEL INVOLVED

The following personnel were directly involved in the Removal Assessment conducted for the Franklin Plastics Corporation Site: Nick Magriples (201-906-6930), Mark Pane (201-906-6813) and Mike Ferriola (201-321-4342) of the Removal Action Branch, Edison, New Jersey. The descriptive and analytical information presented in this evaluation was obtained from a September 17, 1990 Site Inspection Report completed by the Field Investigation (FIT) Team for the Environmental Services Division.

III. SITE SETTING

The Franklin Plastics Corporation, located on approximately eight acres at 113 Passaic Avenue in Kearny, Hudson County, New Jersey, is in a mixed industrial/residential section adjacent to the Passaic River (see Figure 1). The facility is active at this time as a compounder of polyvinyl chloride (PVC) pellets. The site is bounded by Passaic Avenue to the east, a TSS Siedmans warehouse to the north and a manufacturing facility to the south (see Figure 2). The property is fenced where it is not bordered by the Passaic River.



**SITE LOCATION MAP**

**FRANKLIN PLASTICS CORP., KEARNY, N.J.**

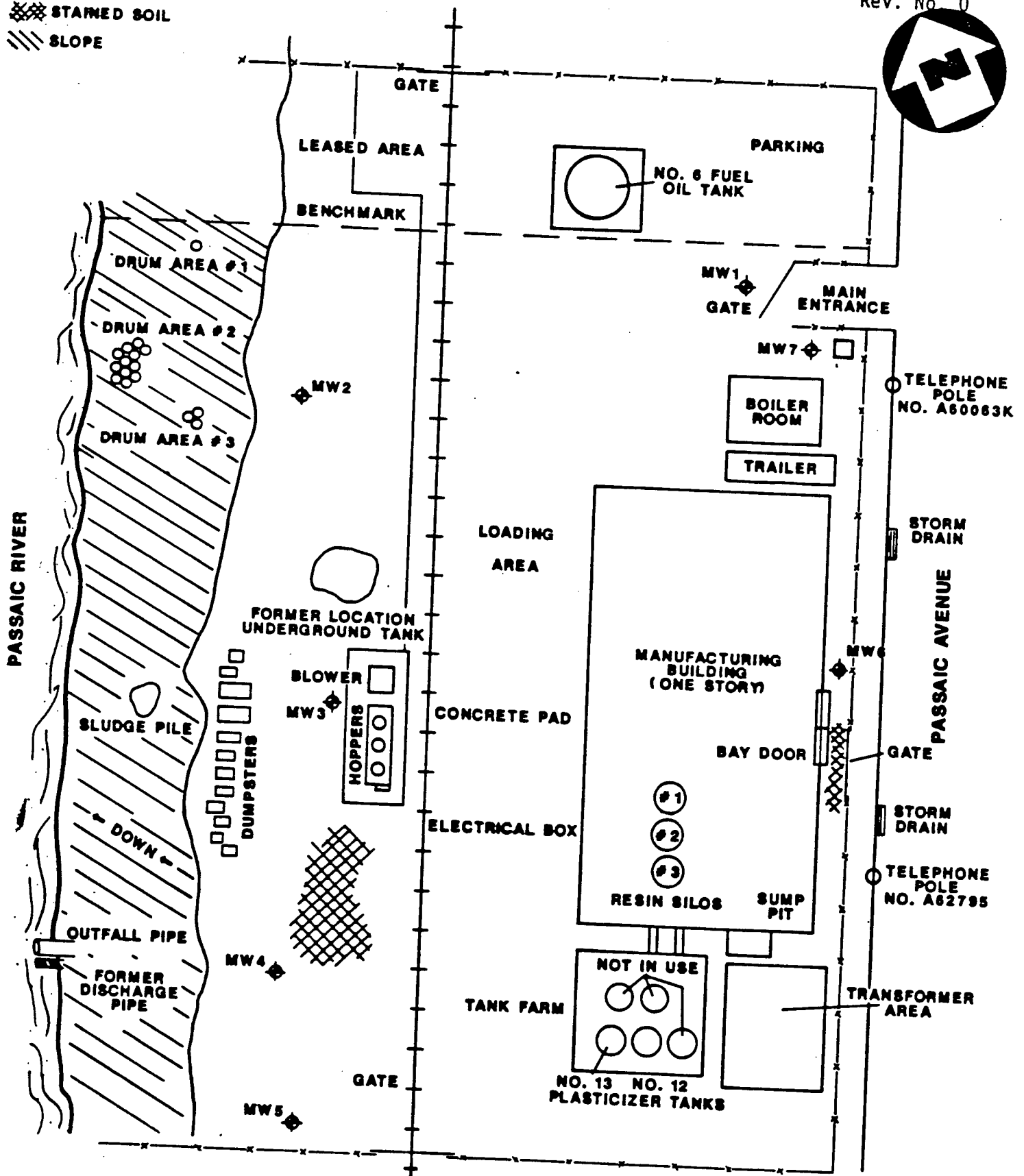
SCALE: 1" = 2000'

**FIGURE 1**



**LEGEND**  
 ▨ STAINED SOIL  
 ▤ SLOPE

02-9002-24-SI  
 Rev. No. 0



**SITE MAP**

**FRANKLIN PLASTICS CORP., KEARNY, N.J.**

NOT TO SCALE

**FIGURE 2**



The estimated population within a 4-mile radius of the site is 569,000. Approximately 1,300 people reside within .25 miles of the site. Ground water is not used for potable or irrigational purposes within three miles of the site. Residents receive their drinking water from the Wanaque Reservoir located in Passaic County, New Jersey. The Passaic River is not used for potable or irrigational purposes within three miles downstream of the site. This portion of the river is classified as TW-3, which designates the waters as used primarily for navigational purposes, not recreational.

#### IV. BACKGROUND

For a detailed explanation of the history of the site, refer to the September 17, 1990 FIT Site Inspection Report (see Attachment A).

#### V. SITE ACTIVITIES/OBSERVATIONS

The Removal Action Branch conducted a reconnaissance of the site on November 8, 1990. The entire site is fenced and a gate on Passaic Avenue provides a point of access.

Access within the fenced property was provided by the owner of the facility. The site can be divided into two areas for purposes of discussion. The easternmost portion is where the process operations take place. This area is almost entirely paved, except for several areas adjacent to the building and the process operation. On the west side of the rail line that bisects the property is a vegetated area that runs adjacent to the Passaic River. This area is strewn with debris as was the Passaic River, in general. Three areas of abandoned drums, their condition ranging from poor to deteriorated, and solidified sludge from the vinyl tile manufacturing process were noted on the bank. The contents of the drums appeared to be vinyl floor tiles. Prior to Franklin Plastics operations at the site (1976), Congoleum Corporation/Floor Covering Division operated a facility at this location. The drums, approximately 30 to 60 feet from the Passaic River appeared to be within the river's flood plain.

A discussion with the owner of the facility revealed that the company was currently undergoing an ECRA study. In 1986, an Administrative Consent Order from the NJDEP allowed the transfer of company stock to Spartech-Franklin, Inc. without completion of the study. A second phase of ECRA sampling was completed and the results submitted to the NJDEP in August, 1990. In addition, a clean-up plan for the site is currently being reviewed by the NJDEP.

A December 3, 1990 conversation with the NJDEP ECRA Case Manager revealed that an agreement with Franklin Plastics for remediation

of the site was expected in early 1991.

#### VI. MATERIALS ON-SITE

Analysis of soil samples collected in July, 1987 by the company itself revealed the following contaminants, as maximum concentrations:

<u>Organic Compounds</u>	<u>Concentration (ppb)</u>
benzene	130
benzofluoranthene	990
bis(2-ethylhexyl) phthalate	26,000,000
butylbenzyl phthalate	220,000
di-n-butyl phthalate	301,000
1,1 dichloroethene	140
di-n-octyl phthalate	1,000,000
fluoranthene	29,000
methylene chloride	4,600
n-nitrosodiphenylamine	10,000
phenanthrene	19,000
tetrachloroethane	140
toluene	290
1,1,1-trichloroethane	450
xylene	550

<u>Inorganic Substances</u>	<u>Concentration (ppb)</u>
antimony	2,350,000
arsenic	1,300,000
beryllium	1,700
cadmium	563,000
chromium	145,000
copper	2,070,000
lead	2,150,000
mercury	4,800
silver	7,300
thallium	27,000
zinc	3,020,000

These samples were either taken from borings or monitoring well corings and their depths ranged from 6 - 48 inches. Most of the samples were collected from either operations areas, such as process sumps, a tank farm, fuel storage areas and water discharge points or west of the rail line.

Analysis of soil and sediment samples collected in June, 1990 by the FIT confirmed the contaminants, and their concentrations, listed above.

All of the organic compounds and inorganic substances listed

above are CERCLA Hazardous Substances as defined in 40 Code of Federal Regulations (CFR) Table 302.4.

#### VII. THREAT

Public access to the site is restricted by a fence on three sides, although there are gates on Passaic Avenue. Access is available along the river side, should someone wade the Passaic River from the adjoining properties. The threat of direct contact with contaminated soils exists for workers at the site.

An Agency of Toxic Substances and Disease Registry (ATSDR) Health Consultation (February 21, 1991), received by the Removal Action Branch on March 5, 1991 stated that the levels of hazardous substances found in the samples collected from the site do not pose a health threat to workers or nearby residents (see Attachment B).

#### VIII. CONCLUSION

Although there has been a release to the environment at the Franklin Plastics Corporation, based on the available information, the site is not removal eligible at this time. An ATSDR Health Consultation indicates that the site does not pose any apparent health threat to the public. The facility is currently working with the NJDEP towards final approval of an ECRA clean-up plan. The contamination at the site has been fully characterized and all that reportedly remains are the details of the remediation. Approval is expected in early 1991.

#### IX. RECOMMENDATIONS

No further action by the U.S. EPA Removal Action Branch is recommended at this time. The Pre-Remedial and Technical Support Section should continue and complete the site ranking to determine if a remedial response is warranted.

Attachments

**ATTACHMENT A**

02-9002-24-SI  
REV. NO. 0

FINAL DRAFT  
SITE INSPECTION REPORT  
FRANKLIN PLASTICS CORP.  
VOLUME 1 OF 2  
PREPARED UNDER

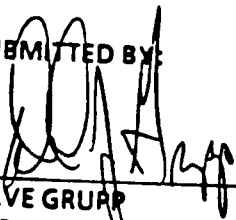
TECHNICAL DIRECTIVE DOCUMENT NO. 02-9002-24  
CONTRACT NO. 68-01-7346


FOR THE  
ENVIRONMENTAL SERVICES DIVISION  
U.S. ENVIRONMENTAL PROTECTION AGENCY

SEPTEMBER 17, 1990

NUS CORPORATION  
SUPERFUND DIVISION

SUBMITTED BY:

  
DAVE GRUPP  
PROJECT MANAGER

  
KATHY CAMPBELL  
SITE MANAGER

REVIEWED/APPROVED BY:

  
RONALD M. NAMAN  
FIS OFFICE MANAGER



12. Identify the types of waste units (e.g., landfill, surface impoundment, piles, stained soil, above- or below-ground tanks or containers, land treatment, etc.) on site. Initiate as many waste unit numbers as needed to identify all waste sources on site.

(a) Waste Management Areas

Waste Unit No.	Waste Unit Type	Facility Name for Unit
1	Stained Soil Area No. 1	Soil Southwest of Blower Pad
2	Stained Soil Area No. 2	Soil East of Expansion Chamber
3	Noncontact Cooling Water Discharge	NJPDES Permit No. NJ0002194
4	Tank Farm Area	Plasticizer Tank Farm
5	Abandoned Drums and Sludge Pile	Abandoned Drums and Sludge Pile

(b) Other Areas of Concern

Identify any miscellaneous spills, dumping, etc. on site; describe the materials and identify their locations on site.

The NJ Department of Environmental Protection Investigative Report of December 20, 1984, observed the premises to be clean, except for minor spills of oils in the truck unloading area and minor spills of white-powdered resins from manufacturing. The resins were reported to be cleaned up at the end of each working day. Franklin Plastics received a Notice of Violation for oily spills along the eastern wall of the main building. These spills probably were due to the release of oil-contaminated steam. On January 5, 1985, Franklin Plastics informed the NJDEP that they had removed 25-45 lbs. of material from this contaminated area and disposed of it in the garbage.

Franklin Plastics maintains one No. 6 fuel oil tank, which is located on the northern, leased portion of the site. The capacity of this aboveground tank is approximately 50,000 gallons. In June 1984, New England Pollution Control Company developed a Spill Prevention, Control, and Countermeasure (SPCC) Plan for Franklin Plastics Corp. A 6,000-gallon underground gasoline tank was removed on February 4, 1986. Upon the tank's removal, surrounding soil appeared to be contaminated from gasoline leakage.

Environment Cleanup Responsibility Act (ECRA) sampling results of July 1987 collected from a former sink discharge area indicate the presence of phthalates. The sink was used by maintenance employees and discharged directly to the surface. Analysis of a surface soil sample from this area indicated the presence of bis(2-ethylhexyl) phthalate (340 ppm), butylbenzyl phthalate (51 ppm), and di-n-octyl phthalate (14 ppm). A petroleum hydrocarbon concentration of 19,000 ppm was reported. The sink is no longer in use.

An on-site reconnaissance performed by NUS Corp. Region 2 FIT in April 1990 noted a condenser blowdown drainage path between the southwest edge of the manufacturing building and the tank farm. The liquid in this drainage ditch was golden/brown in color; its exact constituents are unknown.

Ref. Nos. 2,4, 5,6,13,24,29

13. Information available from

Contact Amy Brochu Agency U.S. EPA Tel. No. (201) 906-6802  
Preparer K. Campbell Agency NUS Corp. Region 2 FIT Date Sept. 17, 1990

## PART II: WASTE SOURCE INFORMATION

Franklin Plastics Corp. is located in Kearny, Hudson County, New Jersey. The facility is a compounder of polyvinyl chloride (PVC) pellets. Figures 1 and 2 provides a site location map and a site map, respectively.

Stained Soil Area No. 1 is located off the southwest corner of the manufacturing building, approximately 10 feet west of the railroad tracks. The darkly stained soil occupies approximately 50 square yards; the specific hazardous chemical constituents, if any, are unknown. The area is unlined with no cover. Shallow groundwater exists at approximately 5 feet. The property is entirely fenced except along the Passaic River boundary, limiting the potential for direct contact.

Stained Soil Area No. 2 is located along the eastern face of the manufacturing building, near the facility's bay door. The patches of dark soil encompass approximately 10 square yards and may be attributable to oil-contaminated steam discharged from the facility. The exact contaminants, if any, are unknown at present. The area is unlined with no cover. During an on-site reconnaissance performed by NUS Corp. Region 2 FIT on April 30, 1990, a drainage pathway was observed from this stained soil area across a public access area to Passaic Avenue, approximately 20 feet north of a storm drain maintained by the City of Kearny (Ref. No. 24).

Franklin Plastics Corp. is permitted to discharge noncontact cooling water under New Jersey Pollutant Discharge Elimination System (NJPDES) Permit No. NJ0002194. Franklin Plastics Corp.'s NJPDES Permit allows for a maximum discharge of 15,000 gallons per day (gpd) into the Passaic River via one outfall pipe (DSN001) located at the southwest corner of the property. Noncontact cooling water from the mixer jacket and roller mills, overflow from the cooling tower, and indoor trenches from the facility drain into a common open sump pit (Ref. No. 23). The sump pit is divided into two sections; the first section is used for settling, while the second section is discharged into the Passaic River via DSN001. The sump pit is reportedly emptied and cleaned out annually. Analytical data of NUS Corporation Region 2 FIT site inspection samples collected from the sump pit indicate the presence of high concentrations of inorganic contaminants and volatile organics, including chloroform, bromodichloromethane, ethylbenzene, and xylenes. The open sump pit is concrete-lined and is directly connected to the discharge pipe into the Passaic River (Ref. No. 24). Sample results from a Compliance Evaluation Inspection conducted on July 16, 1985 indicated that Franklin Plastics Corp. violated its NJPDES permit by exceeding limitations on temperature, chromium, and zinc (Ref. No. 32). A Compliance Evaluation Inspection conducted on July 13, 1989 found Franklin to be in violation of its NJPDES permit for not having reported maximum values on the discharge monitoring reports for the period May 1, 1988 to April 30, 1989 (Ref. No. 1). Franklin Plastics Corp. violated its NJPDES permit for the period ending in October 1988 for failure to submit a discharge monitoring report (Ref. No. 25).

The tank farm area is located along the southern face of the manufacturing building. Two of the five plasticizer tanks are currently being utilized; each has a capacity of approximately 20,000 gallons. Tank No. 12 contains di-n-octyl phthalate; Tank No. 13 contains Jayflex 251. Both compounds are used as plasticizers as part of the manufacturing process. The storage tanks being used appear to be in fair condition; the three tanks not being used appear to be in poor condition. It is unknown whether they are completely empty (Ref. No. 24). Analytical results indicate soil contamination within the tank farm area (Ref. No. 13). The tank farm is surrounded by a concrete block wall and is unlined (Ref. No. 24).

A Preliminary Assessment performed by the U.S. Environmental Protection Agency in January 1980 noted the presence of leaking and/or overflowing drums, the location of which was unspecified (Ref. No. 7). An NUS Corp. Region 2 FIT on-site reconnaissance in April 1990 discovered three areas of abandoned drums along the Passaic River, or western portion of the property. The drums were in poor condition; some drums were partially buried. Their contents appeared to be crumbled pieces of tile. The former operator of the property, Congoleum Corporation/Floor Covering Division, manufactured asphalt and/or vinyl tile on site from 1946 to 1974. Solidified sludge from the vinyl tile manufacturing process was found approximately 200 feet south of Drum Area No. 3 (Ref. No. 24).

### **PART III: PRE-EXISTENT ANALYTICAL DATA**

Hart Associates collected four surface soil samples at Franklin Plastics Corp. on June 27, 1984, including one composite sample from the dust collector area and three discrete samples from the tank farm area. Samples were analyzed by Environmental Testing and Certification (ETC); each sample was found to contain very high levels of plasticizers, metals, and coal tar derivatives. Plasticizers, or phthalates, found include: bis(2-ethylhexyl) phthalate, butylbenzyl phthalate, dimethyl phthalate, and di-n-octyl phthalate. Priority Pollutant metals detected include: antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc. Certain coal tar derivatives, such as fluoranthene, phenanthrene, pyrene, and cyanide, were also reported at high concentrations in the four samples (Ref. No. 21, Table 1).

To allow Franklin to sell all capital stock to Spartech-Franklin, Inc., before completion of an Environment Clean-up Responsibility Act (ECRA) investigation, Franklin Plastics Corp. entered into an Administrative Consent Order (ACO) with the ECRA Enforcement Branch of the New Jersey Department of Environmental Protection (NJDEP) on February 14, 1986 (Ref. Nos. 13, 30). The ACO specified a timetable for completion of all ECRA requirements and provided for financial assurances prior to completion of the transaction. As part of the ECRA investigation, seven monitoring wells

were installed on site; core samples were collected by split spoon at a depth of 6 to 12 inches below ground surface and at a depth of 6 inches above groundwater. Six of the monitoring wells were placed downgradient of possible waste sources. The seventh well, monitoring well No. 1 (MW-1) was intended to provide background or upgradient data. All monitoring well core samples were analyzed for priority pollutants and petroleum hydrocarbons. The groundwater table was found to be perched above a less permeable layer of clayey alluvium (Ref. No. 13, pp. 2, 3).

A total of 33 soil borings were collected on site at varying depths, ranging from 6 to 74 inches. Most samples were analyzed for full priority pollutants, except for areas with compound-specific concerns. For example, the samples collected in the transformer area were analyzed for polychlorinated biphenyls (PCBs) and petroleum hydrocarbons only. Laboratory and field quality assurance/quality control procedures were submitted to the NJDEP with the original documents (Ref. No. 13, p. 2).

Franklin Plastics Corp. is currently in the process of implementing a second phase of sampling that has been required by the NJDEP (Ref. No. 14).

#### Groundwater Data

On June 24 and 25, 1987, Recon Systems, Inc. collected groundwater samples from the seven on-site monitoring wells. Analytical results of monitoring well sampling are summarized in Table 1. All groundwater samples were analyzed by ERCO Laboratories, Cambridge, Massachusetts. Bis(2-ethylhexyl) phthalate was detected in the field blank and laboratory method blank at 22 parts per billion (ppb) and 65 ppb, respectively. Di-butyl phthalate was detected in the laboratory method blank at 3.8 ppb. Concentrations of petroleum hydrocarbons detected in groundwater range from 0.8 ppm to 7.4 ppm, the highest concentration being detected in the sample collected from monitoring well MW-1. MW-1 was originally intended to serve as an upgradient sample location; however, detection of bis(2-ethylhexyl) phthalate, lead, and petroleum hydrocarbons in the MW-1 sample suggests the possibility that contamination may originate off site or the location may not be truly upgradient of all source areas (Ref. No. 13, p. 18).

Recon Systems, Inc. also collected a sample on September 24, 1987 from Franklin Plastic Corp.'s deep production well. No base neutrals were detected. A library search indicated the presence of four unknown phthalates at concentrations ranging from 0.008 to 0.017 mg/L. Petroleum hydrocarbons were found to be <0.5 mg/L in the sample (Ref. No. 31).

#### Soil Data

In July 1987, Recon Systems, Inc. collected 33 soil borings as part of ECRA-required sampling. Approximate soil sample locations are shown in Figure 3. Analytical results indicate that the soil

contains elevated levels of heavy metals, and volatile and semivolatile organic compounds. Tables 2 and 3 summarize the substances detected in the soil samples. Concentrations of petroleum hydrocarbons found in the soil range from 105 ppm to 20,100 ppm, the highest concentration being detected in both B-8 and MW-4 samples. Soil samples B-1, B-2, and B-3 were analyzed by Accutest Laboratories, North Brunswick, New Jersey. The remaining soil samples were analyzed by ERCO Laboratories, Cambridge, Massachusetts (Ref. Nos. 13, pp. 18 and 22).

#### **PART IV: SITE INSPECTION SAMPLE RESULTS**

NUS Corporation Region 2 FIT conducted sampling at the Franklin Plastics Corp. site on June 5, 1990. A total of 16 environmental samples were collected and included three surface water, four sediment, and nine surface soil samples. Table 4 presents a summary of the analytical data. Figure 4 provides a Sample Location Map. Samples were analyzed under the Contract Laboratory Program (CLP) for Target Compound List (TCL) contaminants excluding cyanide. A complete presentation of the analytical results can be found in Reference Number 3.

Surface water and sediment samples were collected to determine whether a release of contaminants attributable to the facility to surface water has occurred. Surface water sample NJEP-SW1 was collected directly from the facility's discharge pipe. Surface water samples NJEP-SW2 and NJEP-SW3 were collected from the sump pit located on the south face of the manufacturing building. Surface soil and sediment samples were collected to determine whether a potential exists for direct contact with contaminants in the soil that are attributable to the facility or whether a potential exists for a release to the air via particulates attributable to the facility. Soil samples were collected at 0 to 6 inches to document these potential routes of contamination.

Sediment samples NJEP-SED3 and NJEP-SED4 were collected from two storm drains bordering Franklin Plastics Corp. on Passaic Avenue to determine whether storm drain contamination attributable to the facility has occurred. Samples NJEP-S1 and NJEP-S3 were soil samples collected in proximity to two separate drum piles to characterize the material in abandoned drums found on site along the flood area of the Passaic River. Sample NJEP-S2 was a composite waste source sample collected directly from two of approximately 12 drums in Drum Area Number 2. These drums appeared to contain tile-like pieces. Surface soil sample NJEP-S4 was collected near a solidified sludge pile near the Passaic River to characterize the waste source.

Seven monitoring wells are located on site; groundwater samples were not collected due to sufficient data available from previous sampling.

**ATTACHMENT B**



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service  
Agency for Toxic Substances  
and Disease Registry

Memorandum

Date February 21, 1991

From Chief, Technical Support Section, Emergency Response and  
Consultation Branch, Division of Health Assessment and  
Subject Consultation, ATSDR (E32)  
Health Consultation: Franklin Plastics Site  
Kearny, New Jersey

To Lisa K. Voyce  
Public Health Advisor  
ATSDR Regional Services  
EPA Region II  
Through: Director, DHAC, ATSDR (E32)  
Acting Chief, ERCB, DHAC, ATSDR (E32)

BACKGROUND AND STATEMENT OF ISSUES

The U.S. Environmental Protection Agency (USEPA), Region II, has asked the Agency for Toxic Substances and Disease Registry (ATSDR) to review recent (June 1990) data on the Franklin Plastics Site (FPS) and to advise them on the health risk implications posed by contaminants detected on-site.

The FPS occupies approximately 8 acres in a mixed industrial/commercial area of Kearny. It is estimated that approximately 1,300 persons reside within 0.25 miles of the site. No information was provided regarding the location of the residences relative to the site or about the characteristics of the surrounding community.

The site is bounded on the west by the Passaic River, on the east by Passaic Avenue, and on the north and south by industrial and commercial businesses. The main structure on-site is a one story manufacturing building (Attachment 1). An unlined tank farm area, containing three inactive and two active plasticizer tanks, is located along the southern face of the manufacturing building. The tank farm area is surrounded by a concrete block wall. The site property is fenced except where it is bordered by the Passaic River (Attachment 1).

The land area adjacent to the river slopes toward the river and contains a sludge pile and several areas of abandoned drums. This land area occasionally becomes flooded. Segments of the river reportedly are used for recreational purposes, although it is unclear if this occurs at locations near, upstream, or downstream of the FPS.

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The drums located in this land area (some on the surface and some partially buried) are reported to contain crumbled tiles from asphalt and vinyl flooring manufacturing operations that were conducted at the site from 1946 to 1974. An outfall pipe is located at the southwest corner of the site along the river. This pipe serves as a conduit into the river for noncontact cooling water that is collected from the facility sump.

Beginning in 1976 and continuing to the present, a portion of the site has been used for compounding polyvinyl chloride (PVC) pellets. This process occurs within the one story manufacturing building. No information was provided about the workforce that routinely spends time on-site or those that make deliveries or pickups at the bay area.

General public access to the site appears to be restricted by the fence, although there are several gates along Passaic Avenue. Reportedly, public access to the site may be possible from the river. The main entrance to the site is located at the northeast corner of the site and there is another gate near the bay doors of the manufacturing building along Passaic Drive (Attachment).

The FPS has been the subject of several environmental assessments or investigations since 1980. Those investigations indicated that on-site surface and subsurface soils (6 to 74 inches below ground), sediments, and shallow groundwater (depth not given) were contaminated by a variety of heavy metals and organic compounds, particularly lead and phthalates, respectively. Subsurface soil samples taken from an area just on the southwest corner of the building contained the highest levels of phthalate and lead detected during the 1987 sampling round. For phthalates, the compound di(2-ethylhexyl)phthalate (DEHP), was detected at a maximum concentration of 26,000 mg per kilogram (kg) or parts per million (ppm); lead was detected at a level of 2,150 ppm. Other areas reported to contain elevated levels of contamination were the tank farm area, the sloped area along the river, and several areas of heavily stained soil. Individual contaminant concentrations for these areas were not given.

It was reported that shallow groundwater (undefined) beneath the site is contaminated with petroleum hydrocarbons and



phthalates. However, no information was provided to ATSDR about which specific petroleum hydrocarbon components and individual phthalates were detected nor their concentrations. Maximum concentrations of "petroleum hydrocarbons" were reported to be 7.4 milligrams (mg) per liter (l) of water. The highest levels were detected in monitoring well (MW) #1, a well believed to be upgradient of possible contamination emanating from the site. Although phthalates were detected in groundwater, they were also reportedly detected in the blanks, indicating possible laboratory or sampling contamination.

In addition to samples from the shallow aquifer, groundwater samples were reportedly obtained from a deep, on-site production well. The location and depth of this well were not given. Petroleum hydrocarbon concentrations were reported as less than 0.5 mg/l; maximum phthalate concentrations were reported as 0.017 mg/l. Four phthalates (not identified) were reportedly detected. Groundwater flow patterns for the area of the site were not described. Downstream of the site neither groundwater or surface water from the Passaic River are used for potable water supplies. Because of the salinity, the Passaic River is not used for irrigational purposes within an area 3-miles downstream of the site.

A limited number of samples of surface soil, sediment, and surface water associated with the sediments were taken during the June 1990 sampling round. The samples were analyzed for phthalates, heavy metals, and selected polycyclic aromatic hydrocarbons (PAHs). The environmental media sampled and their locations are shown in the Attachment. Groundwater, which had been sampled during previous investigations, was not sampled during this latest sampling round.

Results of the sampling indicate that high levels of total phthalates (DEHP, butylbenzylphthalate, and di-n-octylphthalate) were present in sediments associated with the off-site storm drains along Passaic avenue [1,907 ppm (sed3); 1,758 ppm (sed4)] and the on-site sump pit near the manufacturing building [14,270 ppm (sed2)]. High levels of phthalates, mostly butylbenzylphthalate, were also detected in some surface soil samples found in the sludge pile near the river [16,000 ppm (s4)] and near Drum Area #2 [11,110 ppm (s2)] also along the Passaic River. An area of stained soil near the bay doors (s7) had levels of phthalates approaching

1,800 ppm. Reportedly, water runoff from this latter area into off-site areas of public access were observed during a site visit. Phthalates levels in surface water samples were reportedly below the levels of detection (not specified).

Elevated levels of lead (above 500 ppm but below 1,000 ppm) were found in sediments associated with the storm drains and sump pit. Even higher levels of lead were detected (reported as estimates) in soils near the bay doors (1,430 ppm, s7) and in an area just west of the hoppers (2,520 ppm, s6).

Sampling also identified several locations that had elevated concentrations of PAHs, possibly because of coal ash piles reported on-site. However, total PAHs in any sample where they were detected rarely exceeded 50 ppm and most often samples contained less than 10 ppm.

#### DOCUMENTS AND INFORMATION REVIEWED

1. Final Draft, Site Inspection Report, Franklin Plastics Corp., September 17, 1990
2. ATSDR Toxicological Profiles: PAHs and Di(2-ethylhexyl)phthalate

#### DISCUSSION

The finding of elevated levels of phthalates and lead in sediments associated with the storm drains indicates that some off-site migration of contaminants is occurring into areas of public traffic. Additional migration of contaminants into the river is also possible, particularly during periods of flooding. However, because of the industrial/commercial nature of this area, repeated contact by the general public, with contaminants located in the storm drains or in other off-site areas, appears remote. Even if exposures via inhalation or incidental ingestion following inhalation were to occur, it appears that such exposures would be infrequent and would be to relatively small concentrations when compared to the doses necessary to induce adverse health effects. Frequent ingestion of contaminated sediments is also unlikely at this site. Likewise, dermal exposures among the general population are likely to be insignificant.

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On the other hand, direct contact leading to exposures via dermal, inhalation, or ingestion following inhalation of sediments by workers who are responsible for cleaning the sump area or making repairs is much more likely to occur.

Animal studies and observations of humans exposed occupationally or incidentally to phthalates during dialysis therapy suggest that the phthalates, as a group, tend to have a low order of acute and chronic toxicity. The compound, di(2-ethylhexyl)phthalate (DEHP), is the phthalate that is most frequently encountered by humans in their environment. Phthalates may be present in foods that have been wrapped in plastics and average daily exposures through contaminated foods has been estimated to range from 0.3 to 2 mg per day. For comparison, a person would need to ingest about 125 mg of the most contaminated soil at this site to obtain a dose of 2 mg per day. No health effects have been attributed to such exposures.

The primary concern about phthalates is that they have been shown to be carcinogenic in animals that have ingested large doses of DEHP during their lifetimes. Although there is no evidence to indicate that humans exposed to phthalates have developed cancer, it is prudent to limit exposures.

Although workers will have greater access to the more contaminated areas than the public, it is highly unlikely that they would ingest or come in direct contact with the large quantities of sediment, soil, or water that appear to be required to produce either acute or chronic effects as indicated by animal studies. In general, the same can be said for exposures to lead and PAHs at this site. One possible concern could occur if repeated contamination of work clothes occurs and the contamination is carried into homes where small children and toddlers may be exposed.

Because of the flooding that occasionally occurs and the levels of phthalates in the sloped area adjacent to the river, some phthalates may be entering the Passaic River. The phthalates can bioaccumulate to some degree in aquatic invertebrates which might serve as a food source for fish. Although little information was available about fishing in the river, exposures to humans as a result of ingesting fish from the river would appear to be insignificant. Whether or not migration of contaminants into the river from this site

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represents an environmental concern is beyond the scope of this Consultation.

#### CONCLUSIONS

Based on the available data and information, the ATSDR concludes that no apparent health threat is posed to workers or nearby residents by the levels of contamination detected at the site.

#### RECOMMENDATIONS

1. Ensure that contamination is not being carried to worker's homes via their work clothes.



Allan S. Susten, Ph.D., DABT

Attachment

ATSDR:DHAC:ERCB:AASusten:jaf:2/13/91:0615  
Doc: FRNKLN2.CNS